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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,549	05/06/2005	Dong-Soon Kwon	JW1103	7165
32047	7590	09/23/2008	EXAMINER	
GROSSMAN, TUCKER, PERREAULT & PFLEGER, PLLC 55 SOUTH COMMERCIAL STREET MANCHESTER, NH 03101			PATEL, SMITA S	
			ART UNIT	PAPER NUMBER
			4162	
			MAIL DATE	DELIVERY MODE
			09/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/534,549	KWON, DONG-SOON
	<b>Examiner</b>	<b>Art Unit</b>
	SMITA PATEL	4162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 06 May 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) \_\_\_\_\_ is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) 1-28 are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-6, drawn to a product Solid Ingredient A.

Group II, claim(s) 7-9, drawn to a product Liquid Ingredient B.

Group III, claim(s) 10-12, drawn to a product Liquid heating element.

Group IV, claim(s) 13-28, drawn to a method for producing liquid heating element.

2. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: The special technical feature in Group I is producing Solid ingredient A product by heating activated carbon, kaolin, copper sulfide and phosphoric acid (H<sub>3</sub>PO<sub>4</sub>) to a temperature ranging from 1,000 to 1,200° C. The special technical features in Group II is producing liquid ingredient B product by mixing solid ingredient A with silicon powder and water and heating the mixture. The special technical features of Group II is not shared by Group I since the specifics of solid ingredient A is not defined and heating to a temperature

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range of 1,000 to 1,200° C of Group I is not recited in Group II of making liquid ingredient B as well as silicon powder and water of Group II are not recited in Group I. The special technical feature in Group III is producing liquid heating element by mixing liquid ingredient B with ethylene glycol, leaving the mixture for predetermined period of time and filtering the mixture. The special technical features of Group III is not shared by Group II and Group I since specifics of liquid ingredient B with silicon powder and water and heating the mixture of Group II and specifics of solid ingredient A is not defined as well as heating to a temperature range of 1,000 to 1,200° C is not recited in Group III. In addition, ethylene glycol and filtering mixture of Group III are not shared in Group I and II.

The special technical feature in Group IV is a method for producing liquid heating element comprising steps of preparing solid ingredient A from activating carbon, kaolin, copper sulfide and phosphoric acid (H<sub>3</sub>PO<sub>4</sub>), preparing liquid ingredient B from solid ingredient A, silicon powder and water; mixing the liquid ingredient B with ethylene glycol in a predetermined ratio and leaving the mixture for predetermined period of time; and filtering the mixture. The special technical features of Group IV does not share heating to a temperature range 1,000 to 1,200° C of Group I; does not share heating the mixture and temperature range of Group II, does not share ethylene glycol in a predetermined ratio of Group IV in Group III. In addition Group IV has technical feature of grinding a solid during heating step that is not taught in Group I, II and III. Thus, the special technical features in Group I-IV are not shared with each other.

3. A telephone call was made to Donald J. Perreault on September 15, 2008 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SMITA PATEL whose telephone number is (571)270-5837. The examiner can normally be reached on Monday-Thursday, 8:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SP, Art Unit 4162  
September 19, 2008

/Melvin C. Mayes/  
Primary Examiner, Art Unit 1791